



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

MEMORANDUM

TO: State Water Control Board

FROM: Ellen Gilinsky, Ph.D., Director, Water Division

DATE: May 21, 2010

SUBJECT: Consideration to Designate a Portion of the Dan River as a Public Water Supply

EXECUTIVE SUMMARY

Staff intends to ask the Board at their June 21, 2010 meeting for approval to publish for public comment amendments to the Water Quality Standards regulation to designate a 1.34 mile segment of the Dan River as a Public Water Supply (PWS).

BACKGROUND

At their July 23, 2009 meeting, the State Water Control Board directed staff to initiate a rulemaking to consider designating a 1.34 mile segment of the Dan River as a public water supply (PWS) in response to a petition from the City of Roxboro, NC. A raw water intake intended to serve Roxboro and the NC counties of Person and Caswell is proposed for the Dan River near the town of Milton, NC approximately 13 miles downriver from Danville, VA. North Carolina water quality standards require public water supply protections to extend 10 miles upriver from the intake. For approximately nine river miles above the intake, the Dan River flows through North Carolina. Virginia standards call for public water supply protections 5 miles upriver from the intake. Roxboro is requesting PWS protection in accordance with Virginia's water quality standards regulation for the 1.34 mile of the Dan River and sufficient length of its tributaries in Virginia to complete the ten mile run of the river as measured from the proposed intake. **Attachment 1** shows a map of the proposed segments in Virginia for PWS designation.

The intake was originally planned for 30 million gallons/day (MGD) but in 2002 the City of Danville, VA expressed concern to the NC Department of Environment and Natural Resources and Roxboro that 30 MGD was excessive. The proposed withdrawal was reduced to 10 MGD.

The need for the proposed intake was prompted due to the City of Roxboro's concerns of extreme drought similar to that of 2002 and the Homeland Security Act which encourages localities to develop alternative water supply sources and inter-local connections for emergency use. The need for the intake considers the possibility that the proposed Dan River intake may be the sole source supply for the two counties and their municipalities should existing wells or reservoirs be damaged or depleted. In addition, Roxboro

indicates that existing water supply may be inadequate if one or more bulk water customers locate in either of the counties.

A Notice Of Intended Regulatory Action (NOIRA) was published in the Virginia Register on December 21, 2009 and the comment period ended February 15, 2010. Comment was received from the City of Danville and from Mr. Larry Lawson.

LOCALITY COMMENT

In general, opposing comment received from localities is directed towards the necessity of the proposed intake, additional restrictions for upstream wastewater treatment facility (WWTF) discharges, the proposed amount of water to be withdrawn, and/or the location of the waters return.

Comment received from Danville's Division of Water & Wastewater Treatment stated their strong opposition to the manner/location in which the water is returned to the Dan River. The proposed intake is near Milton, NC. Danville comment states that the existing wastewater treatment facility discharge that would accommodate the removed water returns it to a tributary to the Dan River approximately 30 miles downriver. They maintain that interbasin transfer of water will result in a significant loss of a natural resource to communities in the Dan River watershed. There are also concerns of future increases in the amount of withdrawal from 10 MGD to 30 MGD as it is their understanding the raw water line is designed to accommodate up to 30 MGD. Another issue of concern is the possibility of degraded water quality during periods of extreme low flow in the river segment between the point of water removal and return. Should this happen they believe the City of Danville could be targeted to treat wastewater to a higher degree. Refer to **Attachment 2** indicating the location of the Danville WWTF in relation to the upper limit of the petitioned PWS segment.

CITIZEN COMMENT

Comment was received from Mr. Larry Lawson. He states his agreement that a PWS designation may be desirable to North Carolina and designation may be an appropriate action by the State Water Control Board (SWCB) but the SWCB would not benefit from this action. He states that if the modification to the Water Quality Standards results in a requirement that the Danville sewage treatment plant or any other discharger must be upgraded to produce a higher quality effluent that will result in negative financial impacts to the dischargers and the Commonwealth. Mr. Lawson believes NC should be willing to provide some incentive to the SWCB by their being agreeable to provide the monies to any wastewater discharger(s) in Virginia that are required to upgrade their wastewater facilities and provide for the continuing costs to maintain and operate these upgraded facilities. He states that designating the Dan River below Danville to the VA/NC line as a PWS has been an issue of differing opinions since the 1970s and during his time with the SWCB, the Board was opposed to the idea of designating this section of the river as a PWS.

LOCALITY COMMENT RECEIVED DURING PETITION COMMENT PERIOD

Concerns similar to those expressed by Danville were provided by Halifax County, the Town of Halifax, and the Town of South Boston in a joint resolution sent to DEQ during the petition comment period. The resolution stated that the distance between water removal and water return effectively bypasses the above named localities. They are concerned the bypass will reduce water supplies that serve existing and future

residential, commercial, industrial, agricultural, and recreational uses. They state mitigation can be achieved by returning treated waste water from the withdrawal back to the river in the vicinity of Milton.

STAFF COMMENT

Staff recognizes the comments received address issues directly related to designating a portion of the Dan River in Virginia as a public water supply as well as issues not directly related to the designation. These other issues deal with how and where the water removed from the Dan River would be returned to the river within North Carolina and the impact that would have on uses of the river within the Commonwealth.

The staff first investigated the potential impact of the public water supply designation on Virginia dischargers to the Dan River. DEQ water permits staff were consulted regarding possible impact to VPDES permitted facilities should a 1.34 mile segment of the Dan River in Virginia be designated PWS. Permitted facilities within the reach are Goodyear - Danville (VA0001201) on Hogans Creek and Blue Ridge Fiberboard (VAR050210) on the Dan.

Goodyear is an individual permit with several stormwater discharges while Blue Ridge Fiberboard is a Stormwater Industrial General Permit. Permits staff is not aware of any impacts the designation would have on these facilities.

The City of Danville North Side WWTF discharge point (with a diffuser) to the Dan is a little over one tenth of a mile upstream of the terminus of the petitioned PWS segment. When permit limits are calculated, low flow conditions are utilized at the point of discharge. A downstream water withdrawal would not affect calculation of permit limits for Danville's discharge. Based on the use of a diffuser at the WWTF, the effluent should be well mixed and so there should not be a concern for any downstream withdrawal. General water quality problems due to low flow (drought) would affect the WWTF regardless of the downstream withdrawal and there is little chance that the withdrawal itself will result in stricter limits for the discharges upstream of the intake.

The other issues raised by the comments deal with how and where the water removed from the Dan River would be returned to the river within North Carolina. The withdrawal may be more likely to affect downstream dischargers because critical flows could be reduced for the Dan River below the intake which may be deducted from historical low flow conditions. This could reduce assimilative capacity at downstream discharge points. The closest significant discharger in VA downriver from the proposed intake is South Boston WWTF which is approximately 30 miles down river. According to the engineering consultant for the City of Roxboro, a portion of the intake water would be returned to the Dan River via the Yanceyville, NC WWTF discharge (permit No. NC004011; design flow 0.6 MGD) to County Line Creek which joins the Dan River just downriver of the proposed Milton intake and is approximately 25 miles upriver from the Town of South Boston. Another portion of the intake water would be discharged to Marlowe Creek by the Roxboro, NC WWTF discharge (permit No. NC0021024; design flow 5.0 MGD). This water is ultimately returned to the Dan River via the Hyco River approximately 10 miles downriver of South Boston. **Attachment 3** shows a map of water return locations in relation to the proposed intake.

DEQ staff recognizes the concerns expressed in the comments from those Virginia communities downstream of the proposed water intake are not directly related to the issue of the public water supply designation. Staff also understands that issues dealing with water resources within the Roanoke River basin have been a subject of discussion for years via the Roanoke River Bi-State Commission. In the interest of maintaining the on-going interstate cooperation, staff expects that North Carolina officials would indicate their commitment to taking similar action in their state if Virginia would ever need additional protection of a public water supply within the Commonwealth. Staff will keep the Board informed of comment received from North Carolina officials on this issue.

STAFF RECOMMENDATION

Staff recommends the Board approve publication for public comment the amendments to the Water Quality Standards regulation to designate a 1.34 mile segment of the Dan River as a Public Water Supply.

Presenter Contact Information:

Alan Pollock, Manager, Office of Water Quality Programs

Phone: (804)698-4002

Email: Alan.Pollock@deq.virginia.gov

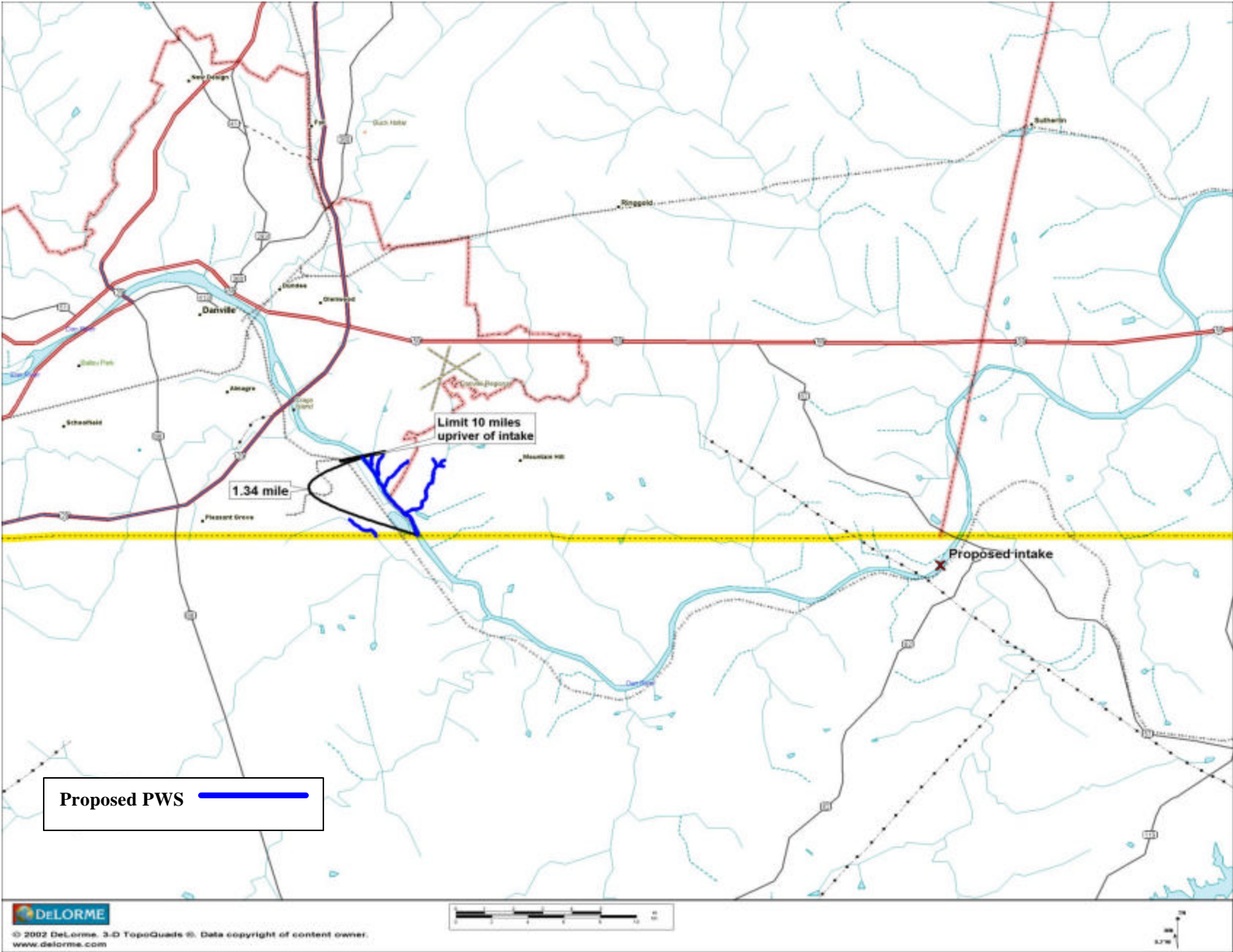
Attachments to this memo to aid in your review of these regulatory amendments are as follows:

Attachment 1: Map of the Dan River and tributary segments petitioned for PWS designation

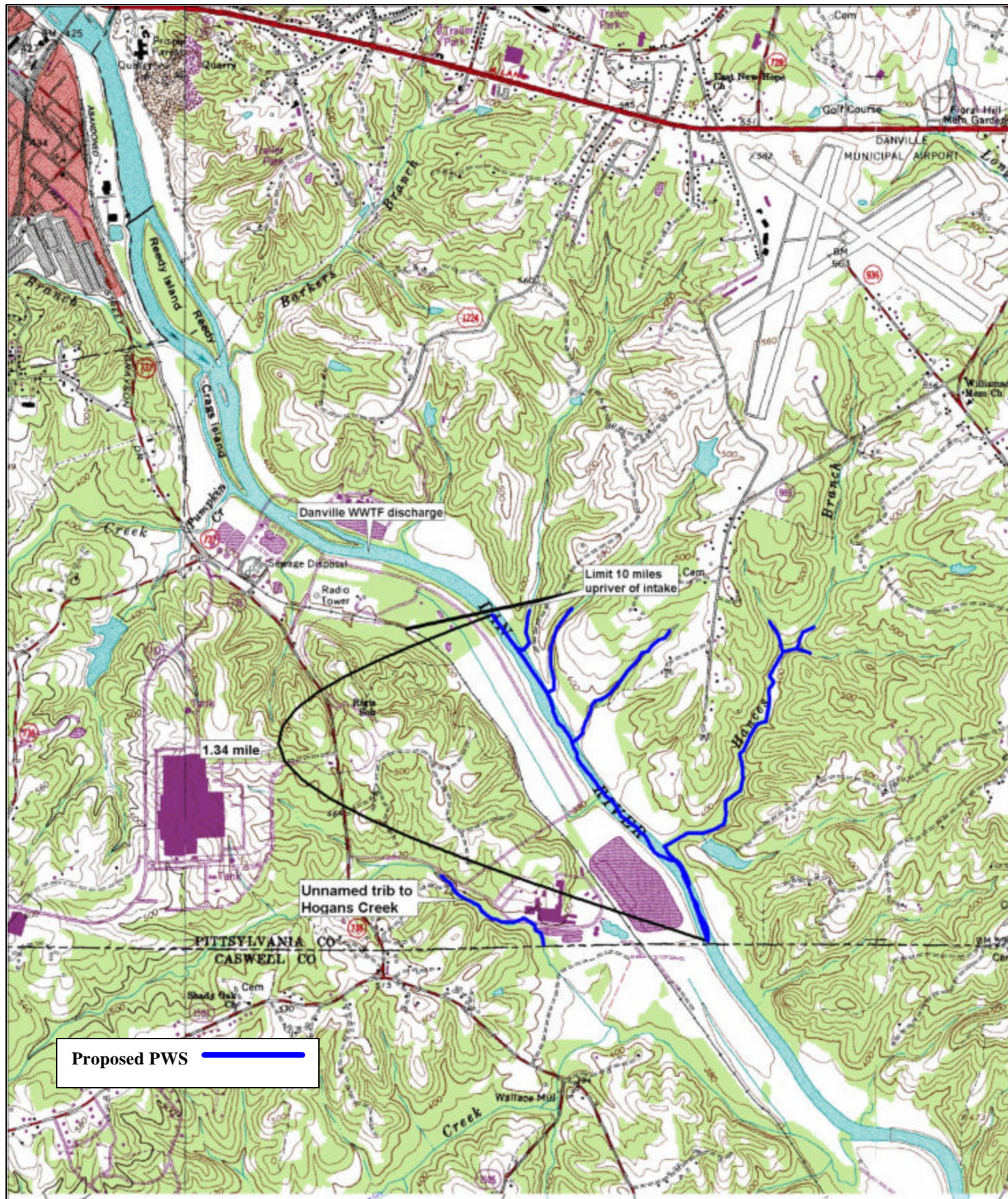
Attachment 2: Map of Danville WWTF in relation to upper limit of petitioned PWS segment

Attachment 3: Map of water return locations

Attachment 1. Dan River and tributary segments in VA petitioned for PWS designation



Attachment 2. Danville WWTF discharge in relation to upper limit of petitioned PWS segment



Attachment 3. Map of water return locations

